

INDEX

COPEIA, 1979, Nos. 1-4

NEW NAMES

- Cophixalus concinnus* 118-121
Cynisca rouxae 122-125
Diceratias pileatus 140-141
Etheostoma blennius sequatchiense 198-201
Kinosternon flavescens durangoense 219-220
Libotinus pearsoni 400-405
Microdesmus africanus 203-205
Phrynichthys thele 142-143
Plethodon fourchensis 109

- Rana chiricahuensis* 383-390
Rhabdosargus thorpei 702-707
Rypticus courtenayi 396-398
Siganus puelloides 390-393
Telmatobius cirrhacelis 715-721
Umbribryaga pyburni 698-701
Urolophus tumbesensis 709-713
Varicus marilynae 126-128

NEW AND ESTABLISHED NAMES

- Abramis brama* 27
Abudefduf troschelii 242-249
Acanthopagrus berda 268
Acarichthys heckeli 679-691
Acipenser ruthenus 518
 stellatus 524
Acrochordus javanicus 744-745
Adelotus brevis 297-306
Aelurophryne
 (2 spp.) 297-306
 brevipes 297-306
Aelurascalabotes 9
Aequidens
 metas 679-691
 paraguayensis 679-691
Afrixalus pygmaeus 278-285
Afroedura transvaalica platiceps 15-16
Agalychnis
 annae 650-655
 callidryas 650-655
Agama agama 585-619
Aighistodon piscivorus 460, 549
Alligator mississippiensis 48-59, 549
Alvordius 413-426
 crassus 421
 roanoka 416
Amblyrhynchus cristatus 255, 496
Ambystoma
 (5 spp.) 297-306
 gracile 273
 maculatum 270-274, 348-350
 tigrinum 348-350, 747-749
Amia calva 404
Amphibolurus
 caudicinctus 38
 decresi 29-40
 fionni 29-40
 ornatus 38
 rufescens 38
 vadnappa 29-40
Amphilophus 679-691
Amphiplaga 400-401, 404
 brachyptera 401, 403
Amphisbaena 125
Amphiuma tridactylum 297-306

- Amyzon* 404
Anarchias yoshiae 128
Anableps
 anableps 88-89
 dovii 84
 dowei 84
 dowii 84
 microlepis 83-84, 88-89
Aneides aeneus 332, 654
Anguilla
 anguilla 360
 japonica 362
 rostrata 360-363
Anodonthyla boulengeri 653-654
Anniella
 geronimensis 242-249
 pulchra 242-249
Anolis 14, 19, 150
 acutus 242-249, 580
 aeneus 242-249
 bimaculatus 242-249
 biporcatus 481
 blanquillanus 242-249
 bonairensis 242-249
 carolinensis 432, 482, 623
 chlorocyanus 482
 chochorum 481
 coelestinus 482
 cristatellus 243, 482
 cybotes 482
 extremus 242-249
 garmani 482
 gingivinus 242-249
 grahami 481-494
 griseus 242-249
 hendersoni 482
 humilis 472-481
 isolepis 482
 leachi 242-249
 limifrons 472-481, 620-626
 lionotus 488, 490
 lividus 242-249
 luciae 242-249
 lucius 482
 marmoratus 242-249

- nubilus* 246
occultus 482, 488
oculatus 242-249
oculatus oculatus 246
oculatus winstoni 242-249
opalinus 482
petersi 481-482
richardi 242-249
roquet 242-249, 481
sabanejewi 242-249
sagrei 482
schwartzii 242-249
spp. 36
trinitatis 242-249
valenciennesi 482
vermiculatus 482
vociferans 482
watsoni 246
Anoplagonaster cornuta 366, 368
Anthias saponaceus 395
Apeltes quadratus 410
Aphredoderus 404
Apistogramma
agassizii 679-691
borelli 679-691
ormanni 679-691
Aprasioides striolata 66
Archocentrus 679-691
Argyrosomus hololepidotus 268
Aristelliger 6, 16-17
cochranae expectatus 16
Asaccus elisae 12-13
Asaphus truei 297-306
Aspidites melanoccephalus 470
Astronotus ocellatus 679-691
Astyanax 85, 87
mexicanus 369-371
Astylosternus robustus 346-348
Austrosparus tricuspidens 707

Bagre marina 359
Bathygobius
andrei 242-249
ramosus 242-249
soporator 242-249
Batrachoseps
(7 spp.) 297-306
attenuatus 743
Batrachuperus
(2 spp.) 297-306
pinchoni 297-306
Bavayia 17
cyclura 16
sauvagei 16
Bipes
biporus 242-249
canaliculatus 242-249
Boleosoma 427
 $(= Etheostoma)$ *nigrum susanae* 426
susanae 426
Bolitoglossa
(6 spp.) 297-306
compacta 741-744

minutula 297-306
rostrata 743
subpalmata 743
Boopsoidea inornata 707
Bothrops jararaca 169-172
Bothus sp. 535-538
Brychactus 115
Bufo 40, 446
americanus 341-345, 448, 498-502
boreas 163-165, 275-278
calamita 164, 275
carens 297-306
garmani 278-285
marinus 341-345
terrestris 739
valliceps 341-345, 643-650
woodhousei fowleri 341-345
woodhousei woodhousei 341-345

Bufoidae
(5 African spp.) 297-306
(21 Asian spp.) 297-306
(17 North American spp.) 297-306
(5 South American spp.) 297-306

Caiman 53-55
latirostris 162-163
Callichrous bimaculatus 148
Callisaurus 36
Callyodon 211
balinensis 210
iseri 211
japanensis 206
Japonensis 206
Candoia bibronii 460
Cantorius
annulata 671
violacea 671
Caranactis 129, 136
Caranx
ignobilis 158
melampygus 158-159
Carassius auratus 749-751
Carcharhinus leucas 268
Careproctus ovigerum 146
Caretta caretta 548
Carphodactylus 6-9
laevis 8
Carphophis vermis 460
Centrolenella
fleischmanni 650-655
granulosa 650-655
prosoblepon 650-655
pulverata 650-655
valerioi 650-655
Ceratias 139
bispinosus 139
 $(Diceratias)$ *bispinosus* 129, 139
Ceratobatrachus guentheri 346-348
Cerberus
rhynchops 661-672
spp. 671
Chelonia mydas 548, 659
Chelydra serpentina 655-660, 692-698

Chelys *pettersii*
Chiropterus
Chœopodus
Chondrostoma
Chriolepis
benthicus
minutum
new
Chrysemys
decolor
floridana
picta
scripta
Chrysopis
aries
chrysargyrea
globiceps
natalensis
Cichlasoma
oceania
temensis
Cichlasomabeanii
bimaculatum
centrale
citrinum
coryphorum
cyanostictum
dovii
dowii 5
facetum
festivum
kraussi
labridens
macracanthum
maculatum
managuense
meeki
motaguense
nigrofasciatum
octofasciatum
salvinii
septemfasciatum
severini
sp. 679
spilurus
trimaculatum
Citharichthys
Clarisia
batrachus
gariepinus
Clemmys
Clinostomum
Cnemaspis
Cnemidophorus
murinus
sexlineatus
tigris 2
Cnidoglossus
Colisa *jaschhofi*
Colopus 1

- Chelys fimbriatus* 657
Chiromantis 633
petersii 278-285
Chirotterotriton magnipes 741-744
Choephryne 118
Chondrodactylus 14
Chriolepis 126
benthonis 126
minutillus 126, 128
new species 126, 128
Chrysemys 697
decorata 692-698
floridana 659
picta 165-169, 551, 659
scripta 168, 549
Chrysophrys
aries 707
chrysargyra 707
globiceps 702, 708
natalensis 705, 707
Cichla
ocellaris 43-47
temensis 679-691
Cichlasoma 679-691
beani 679-691
bimaculatum 679-691
centrarchus 679-691
citrinellum 543, 679-691
coryphaenoides 679-691
cyanoguttatum 679-691
dovii 543, 679-691
dowi 543, 679-691
facetum 686
festivum 679-691
kraussi 679-691
labridens 679-691
macracanthum 85
maculicauda 46
managuense 679-691
meeki 679-691
motaguense 85
microfasciatum 85, 679-691
oefofasciatum 679-691
salvini 679-691
septemfasciatum 679-691
severum 679-691
sp. 679-691
spilurum 680
trimaculatum 85, 679-691
Citharichthys spilopterus 535-538
Clarias
barbatus 156-158
gariepinus 268
Clemmys guttata 165-169
Clinostomus elongatus 26
Cnemaspis 553
Cnemidophorus
murinus 573-577
sexlineatus 747-749
tigris 242-249, 576, 580
Cniodonanis macrocephalus 358-359
Colisa fasciatus 146-149
Colopus 14
Colostethus
collaris 297-306
trinitatus 297-306
Constrictor constrictor 53
Cophixalus
concinus 118-121
exiguus 119, 121
neglectus 119, 121
ornatus 119, 121
saxatilis 119, 121
Cophosaurus 36
Copiula 118
Coryphaenoides
macrocephalus 541-542
thelestromus 541-542
zaniophorus 541-542
Cottus 148
Crenadactylus ocellatus 13
Crenicara filamentosa 679-691
Crenicichla
lepidota 679-691
lucius 679-691
notophthalmus 679-691
strigata 679-691
Crocodylus
acutus 48-59, 549
niloticus 55, 162, 266-269
Crotalus
atrox 460
lepidus 638-639, 641-642
Crotaphytus collaris 580
Cryptobranchus alleganiensis 92-95, 297-306
Ctenosaura pectinata 431-432
Culacea inconstans 410
Cyclorana dahlii 297-306
Cynisca
bifrontalis 124-125
deegysi 123-125
feae 124-125
gansi 124-125
haughi 124-125
kigomensis 124-125
kraussi 123-125
lamottei 124-125
leonina 124-125
leucura 124-125
liberiensis 124-125
mulleri 124-125
nigeriensis 124-125
oligopholis 124-125
rouxae 122-125
schaferi 124-125
Cynoscion regalis 535-538
Cyprinodon 149-152
alvarezi 149-152
alvarezi \times *Megapsilon aporus* 149-152
eximus 149
rubrofasciatus 79
Cyprinus carpio 451
Cyrtodactylus 6, 12
Damalichthys vacca 567-572
Deirochelys insculpta 656, 659

- Dendrobates*
(14 spp.) 297-306
auratus 297-306
lehmaanni 297-306
- Desmognathus*
(7 spp.) 297-306
fuscus fuscus 354
monticola 334
ochrophaeus 270-274, 332-333, 650, 654
quadramaculatus 273
- Diadophis punctatus* 334, 460
- Diaphus urolampus* 555
- Diceratias* 129, 138-139, 141, 143
bispinosus 129, 132, 134, 136, 139-141, 143
pileatus 129, 141, 143-144
- Dicroglossus occipitalis* 346-348
- Diplodactylinae* (subfamily of Gekkonidae) 1-21
- Diplodactylus* 6, 15-16
byrnei 11, 13
ciliaris 11, 13
conspicillatus 11, 14
daemaus 10-11, 13-14
elder 11, 13
pelcher 11
spinigerus 11
steindachneri 11
stenodactylus 11
strophurus 11
tesselatus 11
vittatus 11, 14
- Diplodus sargus* 707
- Dipsosaurus dorsalis* 55-56, 255, 262-263, 431-432, 435, 576, 580, 585, 592, 594, 599
- Discocleles bufoniformis* 346-348
- Dromicmus* 701
- Drymarchon corais* 329-341
- Ebenavia inunguis* 12-13
- Egernia cunninghami* 431-432, 435
- Eigenmannia* 752
- Elaphe* 460
guttata 319-331, 739
guttata emoryi 319-331
guttata guttata 319-331, 739-741
guttata rosacea 319-331
longissima 329
obsoleta 319-331
obsoleta obsoleta 319-331
obsoleta quadrivittata 319-331, 739
obsoleta spiloidea 319-331
quatuorlineata 329
vulpina 319-331
vulpina vulpina 319-331
- Elapomorphus*
bilineatus 745-747
bollei 745
iheringi 745
lemniscatus 746
melanopleurus 745
reticulatus 745
spiegazzinii 745-746
suspectus 745-746
tricolor 745
trilineatus 745
- Electrophorus* 752
- Eleutherodactylus latrans* 765
- Embiotoca*
jacksoni 571
lateralis 567-572
- Emydoidea* 656
- Enhydrina schistosa* 307-318
- Enhydris bennetti* 671
- Ensatina escholtzii* (i) 297-306, 339, 502-508, 743
- Eoichiodon*
rosei 404
woodruffi 400, 404
- Eosalmo* 404
driftwoodensis 404
- Erismanopterus* 400-401, 404
levatus 401-403
- Erythrolamprus aesculapii* 169-172
- Etheostoma*
blennioides 196-197, 199, 202
blennius 191-203
blennius: blennius × sequatchiense 191-203
blennius blennius 191-203
blennius sequatchiense 191-203
euzonum 199
histrio 197, 199, 202
inscriptum 197, 199
kanawhae 199
luteovinctum 196
nigrum 426-427, 429
nigrum eulepis 428
nigrum: nigrum × susanae 426-430
nigrum nigrum 426-427, 429
nigrum susanae 426-430
osburni 199
peltatum crassus 421
roanoka 416
rupestre 197, 199
sellare 197, 199
spp. 195
striatum 196
swannanoa 196-197, 199, 202
tetrazonum 197, 199
thalassinum 196-197, 199
variatum 196-197, 199
zonale 196-197, 199, 202
- Eucyclogobius newberryi* 530
- Eumeces*
anthracinus 748
fasciatus 748
laticeps 748
obsoletus 580, 747-749
septentrionalis 747-749
- Euproctus*
asper 297-306
montanus 297-306
- Eurycea*
bislineata 270-274
longicauda 297-306
- Fordonia leucobalia* 671
- Fundulus*
diaphanus 544-546
heteroclitus 291-297, 358-359
majalis 291

not
spp.
Gleich
Gambu
affin
affin
affin
affin
affin
Garman
Gastero
acule
acule
acule
acule
acule
Gastrod
Gavialid
Gehyra
multil
Gekko 1
Gekkon
Geochel
denti
elong
Grophag
brasil
jurup
surinam
Gerrhon
Gerrhos
Gillith
Girella
Gnathan
Gnathop
Gobiomor
Gopheru
Gyrinop
Hadrop
Heliope
(3 sp
eyrei
Hemida
flavio
frena
garna
Hemir
Hemiphr
Hemiphr
Hemisus
Herichth
Hera 6
Herotila
Heterod
nasicu
platyrh
Hildatia
brasili
Hildebra
Hipopon
Holacan
bermu
ciliaris
tricolo

- notatus* 291
spp. 152
- Galeichthys felis* 359
- Gambusia*
affinis 148, 452, 509-513
affinis: affinis \times *holbrooki* 509-513
affinis affinis 60-64, 509-513
affinis holbrooki 509-513
- Garmanella pulchra* 152
- Gasterosteus* 405, 411
aculeatus 525-535, 635-638
aculeatus aculeatus 529
aculeatus microcephalus 529-533
aculeatus williamsoni 529, 532
- Gastrotheca peruviana* 297-306
- Gavialis gangeticus* 162
- Gehyra* 17
multilata 552-554
- Gekko* 17-18
- Gekkoninae* (subfamily of Gekkonidae) 1-21
- Gekkoleone*
denticulata 697
elongata 659
- Geophagus*
brasiliensis 679-691
jurupari 679-691
surinamensis 679-691
- Gerrhonotus multicarinatus* 580
- Gerrhosaurus* cf. *major* 172-174
- Gillichthys mirabilis* 63
- Girella nigricans* 62
- Gnathanodon speciosus* 535-538
- Gnathopogon coerulescens* 22-28
- Gobiomorus dormitor* 542-544
- Gopherus polyphemus* 659
- Gyrinophilus porphyriticus* 270-274, 334
- Hadropterus roanoka* 416
- Heleioporus* 303
(3 spp.) 297-306
eyrei 297-306
- Hemidactylus* 6, 17
flaviviridis 553
frenatus 552-554
garnoti 553
- Hemiergis peronii* 66
- Hemiphractus panamensis* 297-306
- Hemiphyllodactylus* 17
- Hemisus marmoratum* 278-285
- Herichthys* 679-691
- Heras* 679-691
- Herotilapia multispinosa* 679-691
- Heterodon*
nasicus 748
platyrhinos 739, 747-749
- Hildatia* 751-752
brasiliensis 751-752
- Hildebrandtia ornata* 279
- Hipopomus* 752
- Holacanthus*
bermudensis 161
ciliaris 161
tricolor 160-162
- Holbrookia* 36
maculata 747-749
- Holocentrus rufus* 161
- Hoplosternum* 157
- Hydromantes* 442, 446
genei 297-306, 445
- Hydrophis* 671-672
belcheri 494-497
cyanocinctus 494-497
fuscatus 316
ornatus 551
- Hyla*
(13 spp.) 297-306
bifurca 626-635
cruentomma 626-635
ebrazzata 650-655
faber 297-306
garbei 626-635
gratiosa 297-306
pardalis 297-306
parviceps 626-635
punctata 626-635
regilla 297-306
rhodopepla 626-635
rubra 626-635
sarayacuensis 626-635
triangulum 626-635
versicolor 286-290
- Hylidae*
(4 Asian spp.) 297-306
(41 Australian spp.) 297-306
(1 North American sp.) 297-306
(135 South American spp.) 297-306
- Hymenochirus boettgeri* 297-306
- Hynobius*
(2 spp.) 297-306
nasutus 297-306
- Hyperolius*
marmoratus 297-306
nasutus 297-306
- Hypopomus* 752
- Icichthys* 733, 735
lockingtoni 735
- Ictalurus*
melas 452
nebulosus 359
- Idiolychnus urocampus* 555
- Iguana iguana* 497
- Jordanella floridae* 152
- Kassina senegalensis* 278-285
- Katetostoma alboguttata* 128
- Kinosternon*
arizonense 175-177, 218, 221
bauri(i) 548-552, 659, 692-698
baurii baurii 548-552
baurii palmarum 551
cruentatum 219
flavescens 175, 212-225
flavescens arizonense 175-177, 212-225
flavescens durangoense 212-225
flavescens flavescens 175-176, 212-225

- flavescens: flavescens × durangoense* 217, 224
flavescens spooneri 212-225
flavescens stepnegeri 175-176, 219-221
herrerae 218-219
hirtipes 175, 218-219
integrum 175, 218-219
scorpioides 218-219
scorpioides abaxillare 692-698
scorpioides cruentatum 692-698
scorpioides scorpioides 693
sonoriense 175, 218-219
spurrelli 549-551
subrubrum 218-219
subrubrum steindachneri 692-698
Klauberina riversiana 431-437, 577-584
Kyarranus kundagungan 297-306
- Lacerta*
dugesii 250-257
dugesii mauli 250
trilineata 580
vivipara 22, 432
- Laevoceratias liparis* 138
- Lampropeltis*
calligaster 747-749
getulus 748
getulus holbrooki 329, 642
triangulum syspila 329
- Lapemis hardwickii* 316, 496
- Laticauda* 307, 551, 661, 672
colubrina 494-497, 672
laticaudata 494-497
- Leiobrachys* 698, 701
poecilurus 169-172
pygmaeus 698, 700-701
reginae 169-172
- Leiocephalus* 36
carinatus coryi 36
- Leioploisma*
laterale 580
metallicum 66
sp. 66
trilineatum 66
- Lepidodactylus* 17
lugubris 553
- Lepidophyma*
gaigeae 577-584
smithii 436, 577-584
- Lepisosteus tropicus* 84
- Lepomis*
cyanellus 155-156
gibbosus 635-638
spp. 452
Leptocottus armatus 530
- Leptodactylidae*
(37 Australian spp.) 297-306
(6 North American spp.) 297-306
(21 South American spp.) 297-306
- Leptodactylus*
(8 spp.) 297-306
pentadactylus 303
rugasus 297-306
- Leptodeira annulata polysticta* 744
- Leptopelis*
bocagei 279
concolor 279
- Lerista bougainvillea* 66
- Leuresthes*
sardina 79
tenuis 291, 295
- Libotomius*
blakeburnensis 400-404
pearsoni 400-405
- Limnodynastes*
dumerili 297-306
fletcheri 297-306
peronii 297-306
- Lineatriton lineola* 742
- Lioleamus*
fuscus 546-548
lemniscatus 546-548
monticola 546-548
nigromaculatus 546-548
nigroviridis 546-548
nitidus 546-548
platei 546-548
schroederi 546-548
- Liopholis* 698, 701
- Litoria aurea* 355-356
- Lucasium damaeum* 14
- Lygophis* 701
- Lymnodynastes* sp. 66
- Lythrypnus nesiotes* 128
- Malaclemys terrapin* 548-549, 551-552, 659, 668
- Malacochersus tornieri* 659
- Megapsilon aporus* 149-152
- Melaniris gujia* 85
- Melanostigma*
atlanticum 146, 363-366
pammelas 366-369
- Menetia greyi* 66
- Mesonausta* 679-691
- Microdesmus*
aethiopicus 203, 205
affinis 205
africanus 203-205
carri 205
longipinnis 203-205
suttkusi 205
- Microhylidae* (26 spp.) 297-306
- Micropterus salmoides* 149
- Micruroides euryxanthus* 172
- Micrurus*
corallinus 169-172
fulvius 172, 453-463
fulvius fulvius 453, 458-459
fulvius tener 453-463
- Misgurnus fossilis* 27
- Mogurnda obscura* 148
- Monacanthus hispidus* 535-538
- Morethia lineoocellatus* 66
- Morone*
americana 513-518
americana × Morone saxatilis 513-518
chrysops 513-518

- chrysops* \times *Morone saxatilis* 513-518
saxatilis 513-518
- Moxostoma*
macrolepidotum 152-154
macrolepidotum breviceps 154
macrolepidotum: macrolepidotum \times breviceps 154
- Mugil cephalus* 266-269
- Muraena retifera* 128
- Muraenesox bagio* 268
- Mystus tengara* 148
- Nannacara anomala* 679-691
- Natrix*
rhombifera 465, 496
sipedon 452
taxispilota 53
- Necturus* (2 spp.) 297-306
- Neotroplus nematopus* 543, 679-691
- Neoceratodus* 116
- Nephurus* 6, 9-10, 14
asper 9
laevissimus 10
levis 9-10
- Nerodia*
fasciata 671
fasciata clarki 548, 551
fasciata compressicauda 548-549
fasciata tamaiana 548
rhombifera 465
sipedon 551, 671
sipedon williamengelsi 548
- Nocomis micropogon* 429
- Notophthalmus*
meridionalis 297-306
viridescens 274, 297-306, 351
- Notropis*
girardi 77
lutrensis 70-81
volutellus 437-441
- Nyctimystes*
humeralis 297-306
rueppeli 297-306
- Oedipina* (7 spp.) 297-306
- Oedomognathus exodon* 751-752
- Oedura* 6, 15-17
castelnau 15
lesueuri 15
- Oneirodes* 129, 136, 143
- Onychodactylus japonicus* 297-306
- Ostariophysan* fishes 111-118
- Oxyhopus petola digitalis* 169-172
- Oxyzygonectes dovi* 87
- Pachydactylus* 14
- Pachymedusa dacnicolor* 297-306
- Paraliparis*
calidus 145-146
copei 145-146
garmani 145-146
- Paramesotriton chinensis* 297-306
- Parapetenia* 679-691
- Paroedura gracilis* 12-13
- Paroneirodes* 129, 139, 141
glomerosus 129, 139, 141-142
- Pelamis platurus* 307, 672
- Pelobatidae*
(11 Asian spp.) 297-306
(3 North American spp.) 297-306
- Pelophryne misera* 297-306
- Pepirus*
burti 538-541
burti \times Peprilus triacanthus (?) 538-541
triacanthus 538-541
- Perca flavescens* 635-637
- Percina*
crassa 413-426
crassa roanoka 416
notogramma 413-416, 420-425
notogramma montuosa 420
notogramma notogramma 420
peltata 413-426
roanoka 413-426
- Percopis* 401, 403-404
omiscomaycus 403
transmontana 403
- Phoxinus cumberlandensis* 426
- Phrynichthys* 129, 141, 143
sp. 141-143
thele 129, 139-143
wedli 129-144
- Phrynobatrachus*
acridoides 278-287
natalensis 278-287
- Phrynohyas* (3 spp.) 297-306
- Phrynomerus bifasciatus* 278-287
- Phrynosoma* 262
cornutum 747-749
douglasi 747-749
m'calli 580
spp. 263
- Phyllobates*
(5 spp.) 297-306
zaparo 297-306
- Phyllodactylus* 6, 16
europaeus 12-13
gerrhopygus 12
juliensi 12
marmoratus 12
microphyllus 12
palmatus 12
porphyreus 12, 553
riebeckii 13
siamensis 12
- Phyllurus cornutus* 9
- Physalaemus*
lemur 650-655
pustulosus 650-655
- Pimephales promelas* 451, 549
- Pipidae* (4 spp.) 297-306
- Pituophis melanoleucus melanoleucus* 329
- Placogaster* 125
- Plagiostremus* spp. 160-161
- Platyhyla grandis* 653-654
- Platthyra flavescens* 218
- Platyurus platyrus* 552-554

- Plethodon*
 (9 spp.) 297-306
caddoensis 95-110, 502-508
cinerous 270-274, 332, 339, 502-508, 653
dorsalis 502-508
dunni 502-508
elongatus 502-508
fourchensis 95-110, 502-508
fourchensis \times *Plethodon ouachitae* 97, 100, 103-104, 107
glutinosus 95-110, 270-274, 502-508
hoffmani 502-508
hubrichti 502-508
idahoensis 502-508
jordani 107-108, 270-274, 502-508
larselli 502-508
neomexicanus 502-508
nettingi 502-508
ouachitae 95-110, 502-508
punctatus 502-508
richmondi 271, 502-508
serratus 106, 502-508
shenandoah 502-508
stormi 502-508
vandykei 502-508
vehiculum 502-508, 743
websteri 502-508
wehrlei 502-508
welleri 271, 502-508
yonahlossee 95-110, 502-508
- Plethodontohyla notosticta* 653
- Pleurodeles wall* 297-306
- Plotosus*
anguillaris 359
lineatus 357-360
- Poecilia*
reticulata 225-242, 440
sphenops 148
 spp. 85
- Poeciliopsis* 85
occidentalis 60
- Polyodon spathula* 518, 521, 524
- Pomadasys commersoni* 268
- Pranesus insularum* 158-159
- Prionosparus* 702
tricuspidens 702
- Promicropoetes decoratus* 396, 398
- Protopterus amphibius* 360
- Pseudemys* (= *Chrysemys*) *scripta* 549
- Pseudoeurycea juarezii* 742
- Pseudophryne* 654
 (3 spp.) 297-306
corroboree 303
- Pseudopleuronectes americanus* 358-359
- Pseudoscaphirhynchus haufmanni* (= *kaufmanni* ?) 524
- Pseudotomodon trigonatus* 745
- Pseudotriton*
montanus 271, 274
ruber 271, 274, 334
- Pterophyllum*
eimekei 679-691
scalaris 679-691
- Ptychadenas superciliaris* 278-287
- Pungitius*
hellenicus 405, 411
platygaster 405, 408-409, 411
platygaster australis 405, 411
platygaster platygaster 405, 408-409, 411
pungitius 405-412
pungitius laevis 405-409, 411
pungitius pungitius 405-409, 411
pungitius sinensis 405, 411
pungitius tymensis 405, 411
- Python*
molurus 56, 466-471
molurus bivittatus 466-471
molurus molurus 466-471
- Pyxicephalus*
adspersus(a) 297-306, 346-348
delaland(e)i 278-287, 346-348
- Rana* 40
 (10 Asian spp.) 297-306
 (3 North American spp.) 297-306
albolabris 346-348
angolensis 346-348
areolata circulosa 346-348
arfaki 346-348
arvalis 346-348, 554
aurora 346-348
berlandieri 385, 389, 643-650
berlandieri forsteri 387
blairi 342, 385-386, 389
blythi 346-348
boylei 346-348
cancrivora 346-348
cascadae 346-348
catesbeiana 302-303, 346-348, 447-453, 554
chiricahuensis 385-390
chiricahuensis \times *Rana magnaocularis* 389
daemeli 346-348
dunni 346-348
erythraea 346-348
esculenta 346-348, 554
fisheri 388-389
fuscigula 346-348
galamensis 346-348
grisea 346-348
grylio 346-348
heckscheri 346-348
hexadactyla 346-348
johni 346-348
kuhlii 297-306
lessonae 554
maculata 346-348
magnaocularis 385, 389
megapoda 346-348
montezumae 346-348
muscosa 346-348
narina 346-348
onca 388-389
palmipes 346-348, 554-555
palustris 346-348
papua 346-348
puebla 346-348
pustulosa 346-348

- ridibunda* 554
septentrionalis 346-348
sierramadrensis 346-348
sphenoccephala 643
sylvatica 346-348
tarahumarae 346-348
temporaria 346-348, 554
tigrina 346-348
utricularia 346-348, 385, 643
vibicaria 346-348
virgatipes 346-348
zenkeri 346-348
- Ranidae
 (62 Asian spp.) 297-306
 (21 North American spp.) 297-306
- Regina* 465
septemvittata 551
- Rhabdosargus* 702
globiceps 702-709
holubi 702-709
sarbe 702-709
thorpei 702-709
tricuspidens 702-709
- Rhacodactylus* 6, 16-18
auriculatus 16, 18
- Rhacophoridae (48 African spp.) 297-306
- Rhadinaea 698
- Rhamdia 86
guatemalensis 85
- Rhinobatos* *annulatus* 268
- Rhinolemmys* 697
 sp. 659
- Rhynchoedura* *ornata* 13
- Rhypticus*
maculatus 398
nigripinnis 398
xanti 395
- Roeboidea* 85
- Roughleyia tarahumae* 707
- Rutilus* *rutilus* 27
- Rutilus*
bicolor 393-400
bistrispinis 399
courtenayi 393-400
maculatus 396, 398
nigripinnis 393-400
saponaceus 393, 396
saponaceus bicolor 393, 396
saponaceus saponaceus 393
- Sacalia* 697
- Salamandra
 (2 spp.) 297-306
salamandra 442-447
- Salamandrina* (2 spp.) 297-306
- Salmo*
clarkii 673-678
gairdneri 635
trutta trutta 534
- Sanzinia madagascarensis* 470
- Sargus*
auriventris 702, 707
holubi 702, 707-708
- natalensis* 708
nigrofasciatus 708
- Sauromalus* *obesus* 255-256, 431-432, 435-436
- Scaphiopus* (*Spea*) *bombifrons* 747-749
- Scaphirhynchus* *platostomus* 518-525
- Scarus* 211
blochii 206-212
capistratoides 206-212
croicensis 206-212
fasciatus 206-207
gibbus 207, 209
insertus 206-212
japonensis 206-212
jonesi 207
perspicillatus 207, 210
quoyi 206-212
rhoduropterus 207
sordidus 207-210
taeniopterus 211
troschelii 207
viridis 206-207, 209, 211
- Sceloporus*
cyanogenys 258-266
gracilis 432, 460, 580, 624
jarrovi 624
occidentalis 263, 432, 576
olivaceus 580
torquatus 37
undulatus 168, 747-749
undulatus garmani 748
- Schedophilus*
griseolineatus 735
huttoni 733, 735-736
labyrinthicus 735
medusaphagus 733, 735-736
- Scincella* *lateralis* 54
- Scleropages* 116
- Scutiger* *pinguis* 297-306
- Scymnus* 524
- Semotilus* *atromaculatus* 26
- Seriola* 735
- Siebenrockiella* 697
- Siganus*
argenteus 390
corallinus 390
javus 390
lineatus 390
turidus 390
magnificus 390
puelloides 390-393
puellus 390, 392
rivulatus 390
stellatus 390
sutor 390
trispilos 390
vulpinus 390
- Sistrurus*
miliaris 638-642
miliaris barbouri 638-642
miliaris streckeri 638-642
- Sparisoma* *viride* 206-207
- Sparus*
bufonites 707

- psittacus* 707
sarba 702, 707
- Sphenocephalus* 404
 spp. 255
quoyi 261, 263
- Sphyraena barracuda* 159
- Spinachia spinachia* 410
- Staurois natator* 346-348
- Staurotypus*
savillii 692-698
triporatus 693
- Stenodactylus* 14
khobarensis 9-10
levini 9
- Stereochilus marginatus* 297-306
- Sternopygus* 751-752
brasiliensis 752
- Sternotherus*
minor minor 692-698
odoratus 165-169, 455, 551, 655-660
- Stolephorus purpureus* 158-159
- Storeria dekayi* 463-466
- Strongylura marina* 535-538
- Sympodus aequifasciata* 679-691
- Tarentola* 553
- Taricha torosa* 297-306
- Telmatobius*
brevipes 732
cineratus 714, 724-725
cirrhacelis 714-733
culeus 714, 731
ignavus 731
latirostris 732
niger 714-733
vellardi 714-733
- Terrapene*
carolina 655-660
ornata 53, 168
- Thalassophis anomalus* 316
- Thamnophis* 307
sirtalis 329, 464
sirtalis sirtalis 329
- Thorichthys* 679-691
- Tiliqua* 262
- Trachurus lathami* 535-538
- Trichogaster labiosus* 148
- Trichophanes* 404
- Trinectes* 86
- Trionyx*
ferox 659
spiniferus 655-660
- Triturus*
(9 spp.) 297-306
alpestris 40-43
cristatus 40, 350-353
vulgaris 40, 350-351
- Tropidurus* spp. 38
- Trygonoptera* 709
- Tubbia tasmanica* 733-738
- Tylototriton* (2 spp.) 297-306
- Typhlops braminus* 744
- Uaru amphianthoides* 679-691
- Umbribryaga*
mertensi 698-701
pyburni 698-701
pygmaeus 698-701
- Urolophus*
armatus 713
bucculentus 712
circularis 712
concentricus 709-713
halleri 709-713
jamaicensis 709-713
javanicus 712
kaianus 712
maculatus 709-713
muscosus 712
paucimaculatus 713
testaceus 712
tumbesensis 709-713
viridis 713
- Uromastix aegyptius* 432
- Urosaurus* spp. 36
- Urotheca* 698
- Urotrygon* 709
- Uta*
mearnsi 580
stansburiana 256, 580, 612, 624
- Varanus*
bengalensis 67-69
brevicauda 69
caudolineatus 69
eremius 69
exanthematicus 65
gouldii flavirufus 64-65, 67-69
gouldii gouldii 64, 68
gouldii rosenbergi 64-70
mertensi 69
"monitor" 67
niloticus 68-69
spenceri 68-69
- Varicus*
bucca 126-128
marilynae 126-128
 sp. 126
- Vipera ammodytes* 642
- Xantusia*
henshawi 577-584
vigilis 242-249, 455, 577-584
- Xenodermichthys copei* 363-366
- Xenodon* sp. (probably *merremii*) 169-172
- Xenopus* 750
- Ypsiscarus oedema* 207, 209

ABU

ACC

ACT

ADA

ANA

AUD

BEH

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Y

Z

G

SUBJECT INDEX

- ABUNDANCE, 13 anuran species (distribution and abundance in Kenyan pond) 278-285.
- ACOUSTICS, *Rana berlandieri* (acoustic behavior of males: experimental analysis through field playback trials) 643-650.
- ACTIVITY, *Cryptobranchus alleganiensis* (diel activity rhythms) 92-95; *Liolemus* (8 spp.) (activity temperatures) 546-548.
- ADAPTATION, *Cichla ocellaris* (adaptive significance of color patterns) 43-47; *Desmognathus ochrophaeus* (adaptiveness of parental care of egg clutches) 332-341.
- ANATOMY, two subfamilies of gekkonine and diplopodatine geckos (feet) 1-21; *Rana palmipes* (blood vascular system) 554-555.
- AUDITION, *Anolis grahami* (behavioral demonstration) 490-494.
- BEHAVIOR, *Amphibolurus decessus* species complex (hind-leg pushup display) 29-40; *Triturus alpestris* (significance of color signals in partner recognition) 40-43; *Alligator mississippiensis* and *Crocodylus acutus* (with temperature changes) 48-59; snakes (tail displays in response to predation by mustelid mammals (genus *Galictis*) 169-172; *Desmognathus ochrophaeus*, *Eurycea bislineata*, *Plethodon* (*cineratus*, *jordani*, *glutinosus*), *Ambystoma maculatum*, *Gyrinophilus porphyriticus* (effectiveness of behavior and secretions against shrew predation) 270-274; *Elaphe* (*obsoleta*, *guttata*, *vulpina*) (reproductive behavior) 319-331; *Desmognathus fuscus fuscus* (larval feeding behavior) 354; *Salamandra salamandra* (relationship between stimulus orientation and stimulus movement in prey catching behavior) 442-447; *Python molurus* (social behavior) 466-471; *Anolis* (*humilis*, *limifrons*) (inter- and intraspecific aggression) 472-481; *Anolis grahami* (learning paradigm and behavioral demonstration of audition) 490-494; *Agama agama* (microclimate relationships) 585-593; *Agama agama* (implications of mechanistic ecology) 594-614; *Sistrurus miliaris* (combat ritual) 638-642; *Rana berlandieri* (acoustic behavior of males: experimental analysis through field playback trials) 643-650.
- BIOCHEMISTRY, *Anguilla rostrata* (phosphate compounds in red cells of liver and skeletal muscle) 360-363; *Carassius auratus* 749-751.
- BLOOD, *Anguilla rostrata* (phosphate compounds in red blood cells) 360-363; sea snakes (4 spp.) (blood lactate in free-diving snakes) 494-497; *Rana palmipes* (anatomy of blood-vascular system) 554-555.
- BREEDING, *Hyla versicolor* (mate selection related more to perch sites rather than size of male; relation to breeding success) 286-289; *Elaphe* (*obsoleta*, *guttata*, *vulpina*) (reproductive behavior) 319-331; *Gasterosteus aculeatus* (nest habitat preference of low-plate number morphs) 525-528; *Gasterosteus aculeatus* (low-plate number morph breeding in salt water) 529-533; *Gobiomorus dormitor* (breeding biology) 542-544.
- CALLING, *Rana berlandieri* (acoustic behavior) 643-650.
- CHROMOSOMES, *Gambusia affinis* (sex chromosome evolution) 509-513; *Fundulus diaphanus* (location of nucleolus organizer regions of sex chromosomes) 544-546; neotropical Cichlidae (41 spp.) (cytotaxonomy) 679-691; genera *Kinosternon*, *Sternotherus*, *Staurotypus* (6 taxa) (banded karyotypes) 692-698.
- COLOR, *Triturus alpestris* (significance of color signals in partner recognition) 40-43; *Cichla ocellaris* (adaptive significance of color patterns) 43-47; *Poecilia reticulata* (genetic studies of melanic color patterns) 225-239; *Poecilia reticulata* (melanophore-based color mutants; cytological aspects and differential response to melatonin) 232-242; *Lacerta dugesii* (dorsal pigmentation determined to be related to selective predation pressures rather than thermal regulation) 250-257.
- COMBAT, *Sistrurus miliaris* (combat ritual) 638-642.
- COURTSHIP, *Triturus alpestris* (significance of color) 40-43.
- CYCLES, *Fundulus heteroclitus* (lunar spawning cycle) 291-297.
- CYTOTOLOGY, *Poecilia reticulata* (cytological aspects and differential response to melatonin of melanophore-based color mutants) 232-242.
- DEMOGRAPHY, *Gasterosteus aculeatus* (population decline and change in frequency of lateral plates) 635-638.
- DENTITION, *Gnathopagon coerulescens* (dentition; development and replacement pattern of pharyngeal teeth in Japanese cyprinid fish) 22-28.
- DEVELOPMENT, *Gnathopagon coerulescens* (of pharyngeal teeth) 22-28; *Chirophterotriton magnipes*, *Bolitoglossa magnipes* (egg development time) 741-744.
- DIET, *Varanus gouldii rosenbergi* 64-69; genus *Paraliparis* (*copei*, *calidus*, *garmani*) 145-146; *Etheostoma blennius* 202.
- DIGESTION, *Klauberina riversiana* (digestive efficiency) 431-437; *Scaphirhynchus platyrhynchus* (histology of digestive organs) 518-525.
- DIMORPHISM, numerous amphibian spp. (sexual selection and sexual dimorphism) 297-306; *Gasterosteus aculeatus* (sexual dimorphism in integumentary tissues) 533-535.
- DISEASE, *Centrolenella prinsolepon*, *Agalychnis (callidryas, annae)* (fungi lethal to frog eggs) 650-655.
- DISTRIBUTION, family Diceratiidae (maps) 141; *Paraliparis* (*copei*, *calidus*, *garmani*) (geographical and depth) 145-146; *Etheostoma blennius* (maps) 202; *Kinosternon flavescens* (4 subsp.); United

States and Mexico) 213; 13 anuran spp. (abundance and distribution in a Kenyan pond) 278-285; *Litoria aurea* (current distribution of introduced populations in New Hebrides) 355-356; *Elapomorphus bilineatus* (southernmost population; Argentina) 745-747.

ECOLOGY. *Notropis lutrensis* (influence of physico-chemical factors on habitat selection) 70-81; *Anableps dowi* (general; comparison with other 2 spp. in genus) 82-91; *Cryptobranchus alleganiensis* (diel activity rhythms) 92-95; *Varicus marilynae* (notes) 126-128; *Paraliparis copei, calidus, garmani* (notes) 145-146; *Etheostoma blennius* (general; spawning; diet) 191-203; *Anolis (humilis, limifrons)* (niche overlap and inter- and intra-specific aggression) 472-481.

EGGS. *Desmognathus ochrophaeus* (egg clutches less susceptible to predation when attended by females than when unattended) 332-341; *Ambystoma (tigrinum, maculatum)* (ontogenetic variation) 348-350; *Gehyra mutilata*, *Hemidactylus frenatus*, *Platyurus platyurus* 552-554; *Hyla* (9 Ecuadorian spp.) 625-635; *Centrolenella prosoblepon*, *Agalychnis (callidryas, annae)* (fungi lethal to eggs) 650-655; *Chirotterodon magnipes*, *Bolitoglossa compacta* (egg development time and clutch size) 741-744.

ELECTROPHORESIS. *Plethodon (ouachitae, caddoensis, fourchensis)* (genetic relationships of Ouachita Mountain spp.) 95-110; *Moostoma macrolepidotum* (creating kinase variability) 152-153; 31 spp. of herps and fishes (effects of sample size on genetic distance and heterozygosity estimates in electrophoretic studies) 242-249.

ENERGY. *Hyla* (9 Ecuadorian spp.) (clutch energy partitioning) 625-635.

EVOLUTION. genera *Plethodon* and *Ensatinia* (albumin evolution and phylogenetic implications) 502-508; *Gambusia affinis* (sex chromosome evolution) 509-513.

FEEDING. *Alligator mississippiensis* and *Crocodylus acutus* (feeding responses to temperature changes) 48-59; *Varanus gouldii rosenbergi* (diet) 64-72; piscivorous predators and disabled prey 158-160; *Holacanthus tricolor* (possible mucophagy by juveniles) 160-162; *Bufo boreas* (olfactory cures in feeding response) 163-165; *Bufo boreas* (feeding responses elicited by lipid components of prey odors) 275-279; *Desmognathus fuscus fuscus* (larval feeding behavior) 354; *Melanostigma pannemas* (feeding in aquaria) 366-369; *Notropis volucellus* (foraging tactics) 437-441.

FEET. gekkonine and diplodactyline geckos (morphology) 1-21.

FOOD. *Anableps dowi* 82-91; genus *Paraliparis (copei, calidus, garmani)* 145-146; *Holacanthus tricolor* (possible mucophagy by juveniles) 160-162; *Caiman latirostris* (ampullarid gastropods as a possible staple food) 162-163; *Etheostoma blennius*

202; *Damalichthys vacca*, *Embiotoca lateralis* (geographic patterns of prey utilization) 567-572; *Elaphe guttata guttata* (food consumption) 739-741.

FORAGING. *Notropis volucellus* (tactics) 437-441.

FOSSILS. gerrhosauers (Miocene of Kenya) 172-174; *Kinosternon arizonense* (determined to be senior synonym of *K. flavescens stejnegeri*) 175-177; *Libotoniusr pearsoni* (new species of Percopsidae from Eocene of Washington state) 400-405.

FUNCTION. trionychid turtles (packaging problems of head retraction) 655-660.

FUNGI. *Centrolenella prosoblepon*, *Agalychnis (callidryas, annae)* (two species lethal to frog eggs) 650-655.

GENETICS. *Plethodon (ouachitae, caddoensis, fourchensis)* (relationships) 95-110; *Poecilia reticulata* (genetic studies of melanic color patterns and atypical sex determination) 225-231; *Poecilia reticulata* (cytological aspects and differential response to melatonin of melanophore-based color mutants) 232-242; 31 species of herps and fishes (effects of sample size on genetic distance and heterozygosity estimates in electrophoretic studies) 242-249; *Bufo americanus* (heterozygote deficiencies) 498-502; *Salmo clarki* (genetic similarity of two forms) 673-678; neotropical Cichlidae (41 spp.) (cytogenetics) 679-691.

GEOGRAPHICAL LOCALITIES.

Alabama, *Etheostoma blennius* 191-203.
Argentina, *Elapomorphus bilineatus* 745-747.
Arizona, *Kinosternon flavescens arizonense* 175-177; *Rana chirahuensis* 383-390.
Arkansas, *Plethodon (ouachitae, caddoensis, fourchensis, glutinosus)* 95-110.
Atlantic Ocean (western north Atlantic), genus *Paraliparis (coheni, calidus, garmani)* 145-146.
Australia, *Amphibolurus (depressus, fionni, vadnappa)* 29-40; *Varanus gouldii rosenbergi* 64-70; genus *Cophixalus* (including new species, *concinus*) 118-121.

Brazil, seven species of snakes 169-172.
California, *Klauberina riversiana* 431-437.
Chile, *Liolaemus* (8 spp.) 546-548.
Costa Rica, *Anolis (humilis, limifrons)* 472-481.
Delaware, *Fundulus heteroclitus* 291-297.
Ecuador, *Hyla* (9 spp.) 625-635; genus *Telmatobius* 714-733.

Europe (various countries), *Pungitius pungitius* 405-412.
Florida, *Varicus marilynae* 126-128; *Clarias batrachus* 156-158.

Ghana, *Agama agama* 585-619.
Great Britain, *Triturus alpestris* 40-43; *Triturus cristatus* 350-353.

Guatemala, *Anableps dowi* 82-91.
Honduras, *Anableps dowi* 82-91.

Indian Ocean, *Siganus puelloides* 390-393.
Ivory Coast, *Cynisca rouxii* (new species) 122-125.
Japan, *Gnathopogon cornifrons* 22-28.

Kansas, Nash local herpetofauna (Pleistocene; Af-tonian) 747-749.

- (geographic) 7-572;
) 739-
41.
2-174;
senior
5-177;
opidae
05.
problems
llidrys,
60-655.
- ourchen-
eticulata
erns and
ecilia re-
sential re-
ed color
and fishes
ence and
phoretic
zygotyze
tic simi-
tropical
691.
7.
75-177;
- fourchen-
0, genus
-146.
vadnappa)
0; genus
cinnicus)
- 481.
- elmatobius
- pungitus
- batrachus
- turus cris-
- 122-125.
- ocene: Af-
- Kentucky, *Etheostoma nigrum susanae* 426-430; *Rana catesbeiana* 447-458.
Kenya, fossil gerrhosaur 172-174; 13 anuran species 278-285.
Louisiana, *Storeria dekayi* 463-466.
Madeira, *Lacerta dugesii* 250-257.
Malaysia, *Enhydrina schistosa* 307-318.
Maryland, *Hyla versicolor* 286-290.
Mexico, *Anableps dowi* 82-91; *Astyanax mexicanus* 369-371; *Megupsilon aporus* and *Cyprinodon alvarezi* 148-152; *Kinosternon flavescens stejnegeri* 175-177.
New Guinea, genus *Cophixalus* 118-121.
New Hebrides, *Litoria aurea* 355-356.
North Carolina, *Desmognathus ochrophaeus* 332-341; *Percina* (*crassa*, *roanoka*) 415-426.
Ohio, *Desmognathus fuscus fuscus* 354.
Oklahoma, *Notropis lutrensis* 70-81; *Plethodon* (*ouachitae*, *caddoensis*, *glutinosus*) 95-110.
Pacific Ocean (eastern), *Rypticus* (*bicolor*, *nigripinnis*, *courtenayi*) 393-400.
Panama, *Anolis limifrons* 620-626.
Peru, *Urolophus tuberculatus* 709-713.
South Africa, *Mugil cephalus* and *Crocodylus niloticus* 266-269.
South Carolina, *Percina crassa* 415-426.
Tennessee, *Etheostoma blennius* 191-203; *Etheostoma nigrum susanae* 426-430.
Texas, *Micruroides fulvius tenere* 453-463.
Virginia, *Percina roanoka* 415-426.
Washington, *Libotomus pearsoni* (Eocene fossil) 400-405; *Gasterosteus aculeatus* 635-638.
West Virginia, *Percina roanoka* 415-426.
Wyoming, *Salmo clarki* 673-678.
Zaire, *Microdesmus africanus* 203-205.
GILLS, *Plotosus lineatus* (histophysiology in relation to osmoregulation) 357-360.
GLANDS, *Cerberus rhynchos* (possible new salt gland) 661-672.
GROWTH, *Enhydrina schistosa* 307-318; *Micruroides fulvius tenere* (in Texas) 453-463; *Elaphe guttata guttata* 739-741.
- HABITAT, *Notropis lutrensis* (influence of physico-chemical factors in habitat selection) 70-81; *Gasterosteus aculeatus* (low-plate morph breeding in salt water) 529-533.
- HABITS, *Anableps dowi* 82-91.
- HISTOLOGY, *Varanus gouldi rosenbergi* (testes) 64-70; *Plotosus lineatus* (gills and dendritic organs) 357-360; *Scaphiophryne platyrrhynchos* (feeding and digestive organs) 518-525.
- HYBRIDIZATION, *Plethodon fourchensis* \times *Plethodon* (*ouachitae*) 92-110; *Cyprinodon alvarezi* \times *Megupsilon aporus* 149-152; *Morone chrysops* \times *Morone saxatilis*, *Morone americanus* \times *Morone saxatilis* (meristic characters) 513-518.
- INCUBATION, *Gehyra mutilata*, *Hemidactylus frenatus*, *Platyrurus platyrurus* (incubation period) 552-554.
- INTRODUCTIONS, *Litoria aurea* (current distribution in New Hebrides) 355-356.
- INVASION, *Peprilus burti* (of Atlantic Ocean from Gulf of Mexico) 538-541.
- KARYOLOGY, *Anableps dowi* 82-91; *Colisa fasciatus* (somatic G-banded chromosomes and confirmation of female heterogamety) 146-149; *Bufo (americanus*, *woodhousei*, *woodhousei*, *w. fowleri*, *marinus*) (ammoniacal silver staining of nucleolar organizer regions) 341-345; neotropical Cichlidae (41 spp.) (cytotaxonomy) 679-691; genera *Kinosternon*, *Sternotherus*, *Staurotypus* (6 taxa) (banded karyotypes) 692-698.
- KEYS (TAXONOMIC), genus *Cophixalus* (4 spp.) 118-121; family Diceratiidae (key to metamorphosed females) 129-144; genus *Microdesmus* (three spp.; eastern Atlantic Ocean) 205; *Kinosternon flavescens* (includes 4 subsp.) 221-222; genus *Rhabdosargus* 702-709.
- LARVAE, *Desmognathus fuscus fuscus* (larval feeding behavior) 354; *Rana catesbeiana* (survival rate, population density and development) 447-453; larval fishes (x-radiography) 535-538; *Gobiomorus dormitor* (advantage of schooling behavior) 542-544.
- LIFE HISTORY, *Etheostoma blennius* 191-203.
- LIPIDS, *Bufo boreas* (lipid components of prey odors elicit feeding responses) 275-278.
- LIVER, *Anguilla rostrata* (phosphate compounds in liver) 360-363.
- MAPS (DISTRIBUTION), family Diceratiidae 141.
- MERISTICS, *Morone* hybrids (*M. chrysops* \times *M. saxatilis*; *M. americana* \times *M. saxatilis*) 513-518.
- METABOLISM, *Cnemidophorus murinus* (metabolic expenditure and cost of foraging) 573-577; *Xantusia (henshawi*, *vigilis*), *Klauberina riversiana*, *Lepidophyma (gaigeae*, *smithi*) (oxygen consumption) 577-584; *Anolis limifrons* (related to reproduction) 620-626.
- MORPHOLOGY, gekkonine and diplodactyline geckos (parallelism and integrated design in foot structure) 1-21; family Diceratiidae (primarily osteology) 129-144; *Gasterosteus aculeatus* (population decline and change in frequency of lateral plates) 635-638; trionychid turtles (packaging problems of head retraction) 655-660.
- MOVEMENT, *Peprilus burti* (from Gulf of Mexico into Atlantic Ocean) 538-541.
- MUSCLE, *Anguilla rostrata* (phosphate compounds in skeletal muscle) 360-363.
- NESTS, *Gasterosteus aculeatus* (nest habitat preference of low-plate number morphs) 525-528.
- ODORS, *Bufo boreas* (lipid components of prey odors elicit feeding responses) 275-278.
- OLFACTION, *Bufo boreas* (olfactory cues in feeding

- response) 163-165; *Bufo boreas* (feeding responses elicited by lipid components of prey odors) 275-278.
- ONTOGENY, *Ambystoma* (*maculatum*, *tigrinum*) (ontogenetic variation in ovum size) 348-350.
- ORGANS, *Plotosus lineatus* (histophysiology of dentritic organs in relation to osmoregulation) 357-360.
- OSMOREGULATION, *Plotosus lineatus* (histophysiology of gills and dentritic organs in relation to osmoregulation) 357-360; *Kinosternon baurii baurii* 548-552.
- OSTEOLOGY, family Diceratiidae 129-144; Ranidae (many spp.) (observations on cranial foramina) 346-348.
- PALEONTOLOGY, fossil gerrhosaurids (Miocene of Kenya) 172-174; *Kinosternon arizonense* (Pliocene fossil; determined to be senior synonym of *Kinosternon flavescens stejnegeri*) 175-177; *Libotomius pearsoni* (new species of Percopidae from Eocene of Washington state) 400-405; Nash local herpetofauna (Pleistocene: Aftonian) 747-749.
- PARENTAL CARE, *Desmognathus ochrophaeus* (adaptiveness of care of egg clutches to predation) 332-341.
- PHOTOPERIODICITY, *Cryptobranchus alleganiensis* (activity rhythms) 92-95; *Chrysemys picta*, *Clemmys guttata*, *Sternotherus odoratus* (effect of temperature and photoperiod acclimation on thermal preferences) 165-169.
- PHYLOGENY, genera *Plethodon* and *Ensatina* (albino evolution and phylogenetic implications) 502-508.
- PHYSICO-CHEMICAL FACTORS, *Notropis lutrensis* (influence on habitat selection) 70-81.
- PHYSIOLOGY, *Clarias batrachus* (synchronous aerial respiration) 156-158; *Sceloporus cyanogenys* (thermoregulation as related to operant responses for heat at different thermal intensities) 258-266; *Plotosus lineatus* (histophysiology of gills and dentritic organs in relation to osmoregulation) 357-360; *Cnemidophorus murinus* (metabolic expenditure and cost of foraging) 573-577.
- PIGMENTATION, *Poecilia reticulata* (differential response to melanophore-based color mutants) 232-242; *Lacerta dugesii* (dorsal pigmentation found to be related to differential predation pressures rather than to temperature regulation) 250-257.
- POPULATIONS, *Enhydrina schistosa* (population structure) 307-318; *Triturus cristatus* (structure) 350-353; *Rana catesbeiana* (survival rate, population density and development of naturally occurring larvae) 447-453; *Gasterosteus aculeatus* (population decline correlated with change in lateral-plate frequencies) 635-638.
- PREDATION, piscivorous predators and disabled prey 158-160; Brazilian snakes (by mustelid mammals (genus *Galictis*)) 169-172; *Lacerta dugesii* (dorsal pigmentation found to be related to differential predation pressures than to thermal regulation) 258-266; *Mugil cephalus* (by *Crocodilus niloticus*) 266-269; *Desmognathus ochrophaeus*, *Eurycea bislineata*, *Plethodon* (*cinereus*, *jordani*, *glutinosus*), *Ambystoma maculatum*, *Gyrinophilus porphyriticus* (effectiveness of anti-predator secretions and behavior against shrew predation) 270-274; *Desmognathus ochrophaeus* (eggs less susceptible to predation when attended by females than when unattended) 332-341; *Salamandra salamandra* (stimulus orientation and stimulus movement pattern in prey-catching behavior) 442-447.
- PRESERVATION, effects of buffered and unbuffered formalin of fish otoliths 155-156.
- PREY, *Damalichthys vacca*, *Embiotoca lateralis* (geographic patterns of prey utilization) 567-572.
- RECORD, *Coryphaenoides thelostomus* (second known specimen) 541-542.
- REPLACEMENT, *Gnathopogon coeruleoalbus* (replacement pattern of pharyngeal teeth) 22-28.
- REPRODUCTION, *Varanus gouldii rosenbergi* 64-69; *Etheostoma blennius* 201-202; *Enhydrina schistosa* 307-318; *Elaphe* (*obsoleta*, *guttata*, *vulpina*) (reproductive behavior) 319-331; *Melanostigma atlanticum*, *Xenodermichthys copei* (demersal spawning) 363; *Micrurus fulvius tener* (in Texas) 453-463; *Storeria dekayi* (female reproductive biology; Louisiana) 463-466; *Anolis limifrons* (metabolism) 620-626.
- RESPIRATION, *Clarias batrachus* (synchronous aerial respiration) 156-158.
- SALINITY TOLERANCE, *Kinosternon baurii baurii* 548-552.
- SALT GLAND, *Cerberus rhynchos* (possible new salt gland) 661-672.
- SCHOOLING, *Gobiomorus dormitor* (advantage of schooling behavior to fry) 542-544.
- SECRECTIONS, *Desmognathus ochrophaeus*, *Eurycea bislineata*, *Plethodon* (*cinereus*, *jordani*, *glutinosus*), *Ambystoma maculatum*, *Gyrinophilus porphyriticus* (effectiveness of anti-predator secretions and behavior against shrew predation) 270-274.
- SELECTION, *Hyla versicolor* (breeding success related to perch sites rather than size of males) 286-290; numerous amphibian species (sexual selection and sexual dimorphism) 297-306.
- SEX, numerous amphibian species (sexual selection and sexual dimorphism) 297-306.
- SEX DETERMINATION, *Poecilia reticulata* (genetic studies of atypical sex determination) 225-231.
- SEXUAL DIMORPHISM, *Gasterosteus aculeatus* (of integumentary tissues) 533-535.
- SOCIAL, *Python molurus* (social behavior and hierarchy) 466-471.
- SPERM STORAGE, *Acrochordus javanicus* (long term—7 years—sperm storage) 744-745.
- SPAWNING, *Fundulus heteroclitus* (lunar spawning cycle) 291-297; *Melanostigma atlanticum*, *Xenodermichthys copei* (demersal spawning) 363-366; *As-*

- tyanax mexicanus* (breeding method based on annual spawning patterns) 369-371.
- STAINING, *Bufo (americanus, woodhousei, woodhousei, w. fowleri, marinus)* (ammoniacal silver staining of nucleolar organizer regions) 341-345.
- SURVIVAL, *Rana catesbeiana* (survival rate of larvae) 447-453.
- SYNONYMY, gymnotid genus *Hildatia* (junior synonym of *Sternopygus*) 751-752.
- SYSTÉMATICS, *Anableps dowii* (relationships of species to other *Anableps* and of family Anablepidae to other atheriniform fishes) 82-91; *Plethodon (ouachitae, caddoensis, fourchensis)* (genetic relationships as determined by electrophoresis; most closely related to *P. glutinosus*) 95-110; *Cophixalus concinnus* (new species description; relationships; taxonomic key of genus) 118-121; *Cynisca rouxae* (new species; relationship to other congeners) 122-125; *Varicus marilynae* (new species; relationships) 126-128; family Diceratiidae (revision of family; descriptions of two new species) 129-144; *Maxostoma macrolepidotum* (electrophoresis; creatine kinase variability) 152-154; *Kinosternon arizonense* (validity; regarded as subspecies of *K. flavescens*) 175-177; *Etheostoma blennius* (infraspecific variation, including description of new subspecies) 192-203; *Microdesmus africanus* (new species description; relationships and taxonomic key) 203-205; *Scarus (japonensis, quoyi, iserti)* (senior synonyms or corrected names for *Scarus (capistratoides, blochii, croicensis)*, respectively) 206-212; *Kinosternon flavescens* (four subspecies, one new) 212-225; *Rana chiracahuensis* (new species in *Rana pipiens* complex; Arizona) 383-390; *Siganus puelloides* (new species; Indian Ocean) 390-393; *Rypticus (bicolor, nigripinnis, courtenayi)* (eastern Pacific species) 393-400; *Libototius pearsoni* (new species of Percopsidae from Eocene of Washington state) 400-405; *Pungitius pungitius* (geographic variation in European populations) 405-412; *Percina (roanoka, crassa, peltata, notogramma)* 413-426; *Etheostoma nigrum susanae* 426-430; *Morone* hybrids (*M. chrysops* × *M. saxatilis*; *M. americana* × *M. saxatilis*) (meristic characters) 513-518; *Umbrivaga pyburni* (new species, with comments on genus) 698-701; *Rhambosargus thorpei* (new species; key to genus) 702-709; genus *Urolophus* (review of genus; new species) 714-733; genus *Tubbia* (review of genus) 733-738.
- TAXONOMY, neotropical Cichlidae (41 spp.) (cytotaxonomy) 679-691.
- TECHNIQUES, *Bufo (americanus, woodhousei, woodhousei, w. fowleri, marinus)* (ammoniacal silver staining of nucleolar organizer region) 341-345; *Chelydra serpentina* (method to reduce error in weight estimation of freshwater turtles) 346.
- TEETH, *Gnathopogon coeruleoalbus* (development and replacement pattern of pharyngeal teeth) 22-28.
- TEMPERATURE, *Alligator mississippiensis* and *Crocodylus acutus* (feeding responses to temperature changes) 48-59; *Gambusia a. affinis* (preferences under field and laboratory conditions) 60-64; *Chrysemys picta*, *Clemmys guttata*, *Sternotherus odoratus* (effect of temperature and photoperiod acclimatization in thermal preferences) 165-169.
- THERMOREGULATION, *Lacerta dugesii* (dorsal pigmentation shown to be related to differential predation pressures and not to thermal regulation) 250-257; *Sceloporus cyanogenys* (operant responses for heat at different thermal intensities) 258-266.
- TISSUES, *Gasterosteus aculeatus* (sexual dimorphism of integumentary tissues) 533-535.
- VARIATION, *Ambystoma (maculatum, tigrinum)* (ontogenetic variation in ovum size) 348-350.
- VOCALIZATION, *Anolis grahami* (description and significance) 481-489.
- WATER BALANCE, *Cerberus rhynchos* (possible new salt gland) 661-672.
- WEIGHT, *Chelydra serpentina* (method to reduce error in weight estimates of freshwater turtles) 346.
- X-RADIOGRAPHY, larval and juvenile fishes 535-538.
- ZOOGEOGRAPHY, ostariophysan zoogeography (alternative hypothesis) 111-118.